Amendments to the Claims

This listing of claims will replace the originally filed claims in the application.

Listing of Claims:

Claims 1 – 15 (cancelled).

Claims 16 – 30 (cancelled).

Claim 31 (new):   An apparatus which may be used for producing a compressed fluid, said apparatus comprising:

    a)   at least one compressor, wherein a delivery side of said compressor is connected to a compressed fluid network;

    b) .   a connecting line connecting said compressor to a power source;

    c)   at least one switching means for each said compressor, wherein said switching means triggers a change in status for said compressor;

    d)   at least one pressure sensor, wherein said pressure sensor measures the pressure of a fluid in said compressed fluid network; and

    e)   at least one control means, wherein said control means controls said switching means, wherein:

        1)   said control means is connected to at least one actuating means;

        2)   said actuating means actuates each of said switching means;

        3)   said control means comprises at least one selection means;

        4)   said selection means selects, according to a predetermined selection protocol, at least one member selected from the group consisting of:

            i)   at least one compressor to be started;

            ii)   at least one compressor to be switched to idling;

            iii)   at least one compressor to be switched to compressing; and

            iv)   at least one compressor to be switched off; and

        5)   said predetermined selection protocol is dependent upon said pressure in said compressed fluid network.

Claim 32 (new):   The apparatus of claim 31, wherein said compressors are "all-or-nothing" type compressors.

Claim 33 (new):   The apparatus of claim 31, wherein said compressors are identical.

3

Claim 34 (new):   The apparatus of claim 31, wherein said compressed fluid comprises compressed air.

Claim 35 (new):   The apparatus of claim 31, comprising between about two and about 6 compressors.

Claim 36 (new):   The apparatus of claim 31, further comprising at least one data acquisition means, wherein said data acquisition means determines each change of status of said compressor, either constantly or discontinuously, over time.

Claim 37 (new):   The apparatus of claim 31, wherein:
- a)   said control means comprises a programmable controller with a central unit;
- b)   said central unit comprises:
  - 1)   a memory; and
  - 2)   a computer program;
- c)   said computer program selects, at a given time t and when said pressure is greater than either an upper pressure threshold PSH or a lower pressure threshold PSL, at least one member selected from the group consisting of:
  - 1)   at least one compressor to be started;
  - 2)   at least one compressor to be switched to idling;
  - 3)   at least one compressor to be switched to compressing; and
  - 4)   at least one compressor to be switched off; and
- d)   said computer program operates according to said selection protocol.

Claim 38 (new):   The apparatus of claim 37, wherein said control means further comprises a remote control means.

Claim 39 (new):   The apparatus of claim 31, wherein:
- a)   said delivery side of said compressor is connected to a buffer reservoir of compressed fluid by a first linking pipe;
- b)   said buffer reservoir is connected to said compressed fluid network by a second linking pipe; and
- c)   said second linking pipe comprises a shut-off valve.

Claim 40 (new):   The apparatus of claim 39, wherein said delivery sides of at least two said compressors are connected in parallel to said buffer reservoir.

4

Claim 41 (new): The apparatus of claim 39, wherein said first linking pipe comprises a filter.

Claim 42 (new): The apparatus of claim 31, further comprising:

   a) a first linking pipe connecting three said compressors to an inlet of a buffer reservoir, wherein:

      1) said three compressors are connected in parallel; and

      2) said first linking pipe comprises a filter;

   b) a second linking pipe connecting and outlet of said buffer reservoir to said compressed fluid network, wherein said second linking pipe comprises a shut-off valve;

   c) a three-phase power source;

   d) three, three-wire connecting lines each connecting one of said three compressors to said three-phase power source;

   e) a pressure sensor located in said compressed fluid network, downstream of said three compressors;

   f) a programmable controller comprising:

      1) a central processing unit;

      2) a memory, wherein said memory stores an upper pressure threshold PSH, a lower pressure threshold PSL, and other acquired operational data; and

      3) a program, wherein said program selects, when said pressure crosses either said upper pressure threshold PSH or said lower pressure threshold PSL, at least one member selected from the group consisting of:

         i) at least one compressor to be started;

         ii) at least one compressor to be switched to idling;

         iii) at least one compressor to be switched to compressing; and

         iv) at least one compressor to be switched off;

   g) an input connected to said pressure sensor by a sensor line;

   h) a detection device to detect a failure of one of the components of the plant, which are connected to a telephone line; and

   i) three outputs connected to first, second, and third control lines for controlling said switching means, wherein:

      1) said outputs are slaved to said pressure by said central processing unit; and

5

2)   said outputs and said control lines switch said compressors into a status, wherein said status comprises at least one member selected from the group consisting of:
- i)   off;
- ii)   idling; and
- iii)   compressing.

Claim 43 (new):   A method which may be used for producing a compressed fluid, said method comprising:

a)   providing a plant, wherein said plant comprises:

1)   at least one compressor, wherein a delivery side of said compressor is connected to a compressed fluid network;

2)   a connecting line connecting said compressor to a power source;

3)   at least one switching means for each said compressor, wherein said switching means triggers a change in status for said compressor;

4)   at least one pressure sensor, wherein said pressure sensor measures the pressure of a fluid in said compressed fluid network; and

5)   at least one control means, wherein said control means controls said switching means, wherein:

i)   said control means is connected to at least one actuating means;

ii)   said actuating means actuates each of said switching means;

iii)   said control means comprises at least one selection means;

iv)   said selection means selects, according to a predetermined selection protocol, at least one member selected from the group consisting of:

(a)   at least one compressor to be started;

(b)   at least one compressor to be switched to idling;

(c)   at least one compressor to be switched to compressing; and

(d)   at least one compressor to be switched off; and

v)   said predetermined selection protocol is dependent upon said pressure in said compressed fluid network;

6

b) maintaining said pressure in said compressed fluid network, between an upper pressure threshold PSH and a lower pressure threshold PSL, with said compressor;

c) responding to a pressure drop when said pressure in said network drops below said lower pressure threshold PSL, wherein said pressure drop response comprises at least one member selected from the group consisting of:

    1) switching the only switched off compressor to compressing;

    2) switching a switched off compressor with the lowest number of start ups per hour in the past hour (N_D) to compressing;

    3) switching a switched off compressor with the lowest total running time (TMG) to compressing;

    4) switching the only idling compressor to compressing;

    5) switching an idling compressor with the greatest time to next available startup (TRDEM) to compressing;

    6) switching an idling compressor with the greatest number of start ups per hour in the past hour (N_D) to compressing; and

    7) switching an idling compressor with the lowest total running time (TMG) to compressing; and

d) responding to a pressure rise when said pressure in said network rises above said upper pressure threshold PSH, wherein said pressure rise response comprises at least one member selected from the group consisting of:

    1) switching the only compressing compressor to idling;

    2) switching a compressing compressor with the greatest number of available start ups per hour ($N_c - N_D$) to idling; and

    3) switching a compressing compressor with the greatest total running time (TMG) to idling.

Claim 44 (new): The method of claim 43, further comprising switching off an idling compressor wherein:

a) said idling compressor has been idling longer than a minimum idling before switch off time (TMAV); and

b) said number of available start ups per hour ($N_c - N_D$) for said idling compressor is at least about 1.

7

Claim 45 (new):   The method of claim 43, further comprising:

    a)   switching a switched off compressor to compressing; and

    b)   switching off a compressing compressor, wherein:

        1)   said compressing compressor has a time since last start up greater than a switch over time (T_P); and

        2)   the total running time (TMG) of said compressing compressor is greater than the total running time (TMG) of said switched off compressor.

Claim 46 (new):   The method of claim 43, wherein said compressed fluid comprises air.

Claim 47 (new):   A method which may be used for producing a compressed fluid, said method comprising:

    a)   providing a plant, wherein said plant comprises:

        1)   at least one compressor, wherein a delivery side of said compressor is connected to a compressed fluid network;

        2)   a connecting line connecting said compressor to a power source;

        3)   at least one switching means for each said compressor, wherein said switching means triggers a change in status for said compressor;

        4)   at least one pressure sensor, wherein said pressure sensor measures the pressure of a fluid in said compressed fluid network; and

        5)   at least one control means, wherein said control means controls said switching means, wherein:

            i)   said control means is connected to at least one actuating means;

            ii)   said actuating means actuates each of said switching means;

            iii)   said control means comprises at least one selection means;

            iv)   said selection means selects, according to a predetermined selection protocol, at least one member selected from the group consisting of:

                (a)   at least one compressor to be started;

                (b)   at least one compressor to be switched to idling;

8

          (c)   at least one compressor to be switched to compressing; and

          (d)   at least one compressor to be switched off; and

       v)   said predetermined selection protocol is dependent upon said pressure in said compressed fluid network;

b)   maintaining said pressure in said compressed fluid network, between an upper pressure threshold PSH and a lower pressure threshold PSL, with said compressor;

c)   responding to a pressure drop when said pressure in said network drops below said lower pressure threshold PSL, wherein said pressure drop response comprises at least one member selected from the group consisting of:

    1)   switching the only switched off compressor to compressing;

    2)   switching a switched off compressor with the lowest number of start ups per hour in the past hour (N_D) to compressing;

    3)   switching a switched off compressor with the lowest total running time (TMG) to compressing;

    4)   switching the only idling compressor to compressing;

    5)   switching an idling compressor with the greatest time to next available startup (TRDEM) to compressing;

    6)   switching an idling compressor with the greatest number of start ups per hour in the past hour (N_D) to compressing; and

    7)   switching an idling compressor with the lowest total running time (TMG) to compressing; and

d)   responding to a pressure rise when said pressure in said network rises above said upper pressure threshold PSH, wherein said pressure rise response comprises at least one member selected from the group consisting of:

    1)   switching the only compressing compressor to idling;

    2)   switching a compressing compressor with the greatest number of available start ups per hour ($N_c - N_D$) to idling; and

    3)   switching a compressing compressor with the greatest total running time (TMG) to idling; and

e)   providing a computer program which collects all of the input parameters and requires the data to produce the desired output.

9